



Competition for Membership in the  
International Color Quality Club 2018–2020

## Instructions for Participants



The International Color Quality Club 2018–2020  
is jointly supported by **ABB Schweiz AG** and **Q.I Press Controls**



*The International Color Quality Club (ICQC) membership will be presented to newspapers and magazines deserving recognition for their excellence in standardised and consistent quality printing. The focus of the club membership is to show the ability of newspaper and magazine printers to print consistently high quality according to international standards.*

*This competition is open to all newspapers and magazine publishers in the world. Successful participants are awarded a two years' membership in the club.*

## **1. General instructions**

### **1.1 Who can participate?**

The competition is open to all publications, independent of production process or types of substrate used. Distinct categories were created for this purpose:

**Category 1** Cold-set offset on newsprint

**Category 2** Heat-set offset or UV-curing offset on newsprint (Semi-commercial)

**Category 3** Heat-set offset or UV-curing offset on SC or LWC paper (Semi-commercial)

**Category 4** Extra category for printing under non-standard conditions, like e.g. on tinted or dark paper or using processes other than offset (like flexography or digital printing) or printers that work under non-standardised conditions.

**NEW** **Category 5** Magazines, printed in sheet-fed offset, heat-set offset, gravure or digital inkjet (Weekly, fortnightly and monthly magazines to be registered under this Category)

Publication titles can be registered either by publishing or printing companies. Each title is treated as a separate registration. One company can register several titles. One and the same title, printed at various locations, can participate individually in each case. Participation fees are charged per registration.

The competition is based on the objective evaluation carried out in the "Cuboid" target printed by the participant. Several quality parameters are evaluated from the Cuboid and the results of the evaluation are presented in a structured report. This document provides a detailed description of the quality parameters that will be evaluated and their method of evaluation.

Due to different print process techniques, different target values or evaluation methods are applied for the different technical categories. For this reason, in the following remarks the category is named in each case about the criteria.

### **1.2 Evaluation criteria for Newspapers - CATEGORY 1,2,3 and 4:**

In each of the competition months, the WAN-IFRA Cuboid must be printed on all issue days (Monday to Friday) in one specified week. The printing schedule is given in Table 1. Saturdays and Sundays are excluded. If there is a public holiday in any of the days of the week, participants can print the Cuboid on the Saturday. However, participants shall inform WAN-IFRA in advance.

As per the schedule in Table 1, WAN-IFRA will write to the participants at the end of the print-run week in each competition month (January through March 2018), informing them on the exact issue date(s) that we would like to evaluate. Hence, it is very important that the project manager at the participant's end checks their emails for our communication.

For newspaper titles: Ten samples from that specific issue date(s), with at least 16 color pages should be sent to WAN-IFRA. If your edition does not have 16 color pages, please include 10 copies from the next issue date (previous issue date, in case, we ask for the copies from Friday).

If you have any problems with the given schedule please contact the ICQC project manager Prabhu Natrajan (address details on page 20) immediately.

**Table 1, schedule for participants with daily Newspaper**

TEST Run	Print run weeks	WAN-IFRA informs exact issue date of for evaluation	Send samples to WAN-IFRA	Samples to reach WAN-IFRA	Report mailed to participants
<b>Pre-Check</b>	06 to 10 Nov 2017 (Pre-Check)	10 Nov 2017 (Pre-Check)	10 Nov 2017 (Pre-Check)	24 Nov 2017 (Pre-Check)	08 Dec 2017 (Pre-Check)
<b>1<sup>st</sup> Month Test</b>	22 to 26 Jan 2018	26 Jan 2018	26 Jan 2018	09 Feb 2018	23 Feb 2018
<b>2<sup>nd</sup> Month test</b>	26 Feb to 02 Mar 2018	02 Mar 2018	02 Mar 2018	13 Mar 2018	23 Mar 2018
<b>3<sup>rd</sup> Month test</b>	19 to 23 Mar 2018	23 Mar 2018	23 Mar 2018	09 Apr 2018	08 Jun 2018

For **Category 1, 2 and 3**, we will ask only for **one issue date** from each of the print run weeks (January through March 2018). For **Category 4**, we will ask for **two issue dates** from each of the test run weeks.

It means that for the entire three-month competition period (January through March 2018), three issue dates will be evaluated for Category 1, 2 and 3 while, six issue dates will be evaluated for Category 4.

The extra evaluation for Category 4 is essential as we are evaluating the consistency of print quality parameters and most of the targets for Category 4 is the average of the measurements in each parameter. The extra evaluations will ensure more accuracy for Category 4.

**Weekly and fortnightly Newspapers:** Weekly publication must print the "cuboid" on 1st and 3rd week issue and send both the issues dates for each of the competition month (Jan, Feb and March). Fortnightly newspaper have to send all their issue dates of each contest month (Jan, Feb and Mar). They Should send 10 copies of each specified issue date, which contain at least 16 full color pages. Weekly and fortnightly newspaper need to follow the same time line schedule of CAT 5 as per in table 2 (Page 4), but evaluation criteria will be as per your registration category (any of CAT 1, 2,3 and 4).

### 1.3 Evaluation criteria Magazines – CATEGORY 5:

WAN-IFRA will evaluate samples from six issue dates of weekly and fortnightly publications in Category 5. The extra evaluation for Category 5 is essential as we are evaluating the consistency of print quality parameters and most of the targets for Category 5 are the average of the measurements in each parameter. The extra evaluations will ensure more accuracy for Category .

For Categories 5, we will ask for two issue dates from each of the test run weeks and submit 5 samples of each issue that contains the printed Cuboid.

he general print quality evaluation for participating magazines will be based on the first 32 full-color pages (16 facing pages). We will deduct 0.5 points for each of detected print quality defect on each page.

**Timeline and schedules for Category 5:**

Samples that contain the printed Cuboid test element shall be submitted to WAN-IFRA according to the schedule documented in Table 2. If you have any problems with the given submission dates please contact the ICQC project manager Prabhu Natrajan (address details on page 20).

**Table 2:** schedule for participants with weekly, fortnightly and monthly magazines

Type of participating publications	Sample(s) of month	Send samples to WAN-IFRA	Samples to reach WAN-IFRA	Report to participants – on or before
Monthly	Oct 2017	** 31 Oct 2017	11 Nov 2017	30 Nov 2017
Monthly	Nov 2017	** 30 Nov 2017	10 Dec 2017	22 Dec 2017
Monthly	Dec 2017	** 31 Dec 2017	08 Jan 2018	15 Jan 2018
Weekly, Fortnightly & Monthly	Jan 2018	** 31 Jan 2018	08 Feb 2018	15 Feb 2018
Weekly, Fortnightly & Monthly	Feb 2018	** 01 Mar 2018	09 Mar 2018	16 Mar 2018
Weekly, Fortnightly & Monthly	Mar 2018	** 31 Mar 2018	15 Apr 2018	08 Jun 2018

\*\* Send print samples as early as possible to get the reports early before the next print run. This will get you the target reference value before the next print run starts.

**1.3.1 Participants with weekly and fortnightly magazines**

Participants with weekly publications must print the Cuboid in their **1<sup>st</sup>** and **3<sup>rd</sup>** issue of each of the **competition months** January through March 2018 and participants with fortnightly publications must print the Cuboid in all their issues during the competition months January through March.

**1.3.2 Participants with monthly Magazines**

Participants with monthly magazines should print the Cuboid in their only issue in each of the competition months **October 2017 through March**.

**1.4 Downloading and using the print test element**

The Cuboid print test element for ICQC 2018–2020 can be downloaded from the website [www.color-qualityclub.org](http://www.color-qualityclub.org) from **13 October 2017**. The same test element should be used to print on all the print runs.

Treat the Cuboid like a supplied color advertisement! Position the test element on any page of the publication title you have registered for the competition. The Cuboid is non-scalable. The size of the Cuboid must not be changed to allow correct evaluation.

Print the Cuboid under standardised printing conditions as part of a regular issue of your publication. If you do not wish the Cuboid to appear in the distributed issue, you can exchange plates and produce a part-run including the Cuboid that is not for distribution and submit these copies for evaluation.

### 1.5 Pre-Check

Publications who register before **31 October 2017** will get a chance to participate in WAN-IFRA Pre-Check in **November 2017**. Pre-Check is a free evaluation, where participants can send one set of copies printed with the Cuboid to WAN-IFRA and we evaluate the copies with the same instruments and workflow that will be used for the competition. Pre-Check will help participants to know their level of preparedness. A full Pre-Check evaluation is available only for publications participating in Categories 1, 2 and 3 (see paragraph 1.1). The Cuboid test target is the same for the Pre-Check and for the competition test runs from January through March 2018. GPQ will not be evaluated for pre-check.

**CAT 1,2 and 3:** This will be evaluated against ISO 12647-3 and detailed report will be sent as like the actual contest evaluation.

**CAT 4 & 5:** Its optional to participate in the Pre-Check evaluation because no target reference (reference will be your own average figures) will be available for the one-time Pre-Check test. So, you will get grey balance and color register as absolute scores. All other parameters like paper shade, dot gain and color conformity will not be checked against targets in the Pre-Check test. However, the Pre-Check report will inform participants of category 5 about the values we measured

### 1.6 Shipping instructions

To prevent premature aging of the printed samples, they should be packed in such way that they are protected against light and humidity. Printed samples not received on time cannot be included in the evaluation.

While shipping the copies, please ensure that you attach a declaration that the copies are for testing purposes and do not have any commercial value. For declaration format, refer to **Annex 1**.

Since publications from many different countries and languages participate in the competition, we may not be able to identify the publication title and printing location by seeing the copy. Hence, we request the participants to fill the leaflet in **Annex 2** in English language and insert it into the package. You can find Annex 1 & 2 at the end of this instruction document.

Shipment address is mentioned in page 19.

### 1.7 Evaluation reports

Monthly reports are produced to explain the evaluations carried out and the current number of points achieved. You receive such a report for each month of participation (January, February and March 2018).

For the evaluation of the general printing quality, two sample copies per participating title will be selected at random from the submitted copies from different competition months. For newspapers: The first 16 four-color pages per publication copy will be judged. For magazines: The first 32 four-color pages per publication copy will be judged. The results of this evaluation are included in the final report.

The final report also constitutes the concluding report. This will indicate whether your title has been awarded membership in the Color Quality Club 2018–2020. Your evaluation reports are strictly confidential and intended only for you.

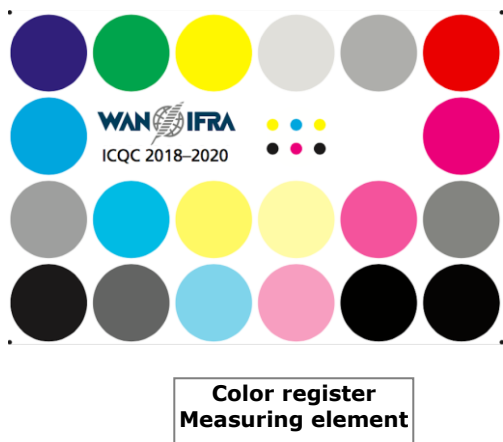
### 1.8 Club membership

Club membership is achieved by publication titles that are produced in consistently high quality printing throughout the test period in accordance with the targets defined in the instructions. To be accepted into the International Color Quality Club, it is necessary to obtain the minimum number of points stated in the instructions.

The new members in the International Color Quality Club 2018–2020 will be announced with the mailing of the final evaluations in June 2018. The winners will be honoured at a special ceremony held during the IFRA World Publishing Expo, 9–11 October 2018, in Berlin, Germany.

For each successful ICQC participation, winner companies will collect one “star”. Companies that have been successful repeatedly in at least 5 competition years will become part of WAN-IFRA’s prestigious “Star Club”. Stars can also be collected by achieving WAN-IFRA’s Certification for Standardised Printing. Please let us know if you need more details.

### 1.9 The Cuboid



The Cuboid can be positioned in the same way as a four-color ad on a publication page. The format is 42 x 28 mm; the PDF is available in CMYK.

**The Cuboid must not be scaled!**

The Cuboid can be used in horizontal or vertical format. Avoid positioning in the fold, as otherwise the evaluation can be influenced by set-off and soiling.

The reverse (backside page) of the Cuboid must be printed with publication-type contents (should have texts or editorial content, should not have solid advt or images). Points are subtracted for blank reverse side, deviating paper types, and different or missing pinholes.

*The figures on the left do not correspond to the original size; the colors may not be used as reference.*

#### CMYK color values and measuring patches of the Cuboid

		1	2	3	4	5	6	
A	Cyan	100%	100%	0%	10%	30%	0%	
	Magenta	100%	0%	0%	8%	24%	100%	
	Yellow	0%	100%	100%	8%	24%	100%	
	Black	0%	0%	0%	0%	0%	0%	
B	Cyan	100%					0%	0%
	Magenta	0%					0%	100%
	Yellow	0%					0%	0%
	Black	0%					0%	0%
C	Cyan	0%	70%	0%	0%	0%	50%	
	Magenta	0%	0%	0%	0%	70%	42%	
	Yellow	0%	0%	70%	40%	0%	42%	
	Black	40%	0%	0%	0%	0%	0%	
D	Cyan	0%	0%	40%	0%	52%	44%	
	Magenta	0%	0%	0%	40%	44%	38%	
	Yellow	0%	0%	0%	0%	44%	38%	
	Black	100%	70%	0%	0%	100%	100%	

The Cuboid contains two 4-Color blacks in patches D5 and D6. Patch D5 corresponds to a Total Ink Coverage (TIC) of 240% and Patch D6 corresponds to a TIC of 220%.

ISO 12647-3:2013 standard recommends 220% TIC for coldset on newsprint. So, patch D6 is used to measure 4-Color Black for category 1. For Categories 2, 3, 4 and 5, patch D5 (TIC 240%) is used.



### 1.10 Evaluation criteria for International Color Quality Club 2018–2020

To be included in the International Color Quality Club 2018–2020, a minimum number of points must be reached within each test run. It is also required that each criterion meets the required minimum number of points during the monthly evaluations. Only if all the criteria in the following table have been met both horizontally and vertically membership is reached.

#### Categories 1, 2 and 3

Criterion	Max. points Test 1	Max. points Test 2	Max. points Test 3	Max. points GPQ	Max. points per criterion total	Min. points per criterion total	Successful
2.1 Newsshade	30	30	30	–	90	60	Yes?
2.2 Mid-tone spread	10	10	10	–	30	18	Yes?
2.3.1 Dot gain 40%	10	10	10	–	30	18	Yes?
2.3.2 Dot gain 70%	10	10	10	–	30	18	Yes?
2.4 Gray balance	30	30	30	–	90	69	Yes?
2.5 Color space in %	11	11	11	–	33	21	Yes?
2.6 Color conformity Delta E	49	49	49	–	147	108	Yes?
2.7 Color register	30	30	30	–	90	90	Yes?
2.8 General printing quality	–	–	–	576	576	500	Yes?
Deduction of points							
Maximum points	180	180	180				
Minimum points per test	<b>156</b>	<b>156</b>	<b>156</b>				
Successful:	Yes?	Yes?	Yes?				
Precondition for ICQC 2018-2020 membership:						12 x "Yes"	

#### Categories 4 and 5

Criterion	Max. points Test 1	Max. points Test 2	Max. points Test 3	Max. points Test 4	Max. points Test 5	Max. points Test 6	Max. points GPQ	Max. points per criterion total	Min. points per criterion total	Successful
2.1 Newsshade	15	15	15	15	15	15	–	90	60	Yes?
2.2 Mid-tone spread	5	5	5	5	5	5	–	30	18	Yes?
2.3.1 Dot gain 40%	5	5	5	5	5	5	–	30	18	Yes?
2.3.2 Dot gain 70%	5	5	5	5	5	5	–	30	18	Yes?
2.4 Gray balance	15	15	15	15	15	15	–	90	69	Yes?
2.5 Color space in %	NA	NA	NA	NA	NA	NA	–	NA	NA	NA
2.6 Color conformity Delta E	30	30	30	30	30	30	–	180	129	Yes?
2.7 Color register	15	15	15	15	15	15	–	90	90	Yes?
2.8 General printing quality	–	–	–	–	–	–	576	576	500	Yes?
Deduction of points										
Maximum points	90	90	90	90	90	90		540	468	Yes?
Precondition for ICQC 2018-2020 membership:								9 x "Yes"		

**Note, Categories 4 and 5:** Absolute points are awarded in each report only for mid-tone spread, grey balance and color register. For all other parameters, the target value is the average of measurements of all six print runs. Hence absolute points are awarded only in the last report. From the second report, interim points are awarded based on the averages of measurements done till that point. They are only for information and should not be taken as absolute points.

### 1.11 Evaluation process

The objective evaluation is divided into the evaluation of the colorimetric data of the printed Cuboid and of the register measurement element. We measure all test copies under standardised conditions using a calibrated measuring instrument, so that the result can be assessed in a way that is as objective and comparative as possible. The evaluation of the Cuboid permits qualified statements in relation to the conformity of the criteria news-shade, mid-tone spread, dot gain at 40% and 70%; grey balance, color space, color conformity and color register precision.

Evaluation points are awarded in accordance with the degree to which the target values are satisfied. The closer the measured values are to the targets of the ISO and WAN-IFRA standards, the more points can be achieved. If the values are within the tolerance range, the points will be awarded in a linear fashion to the calculated deviations. No points are awarded if the tolerance values are exceeded.

The color and density measurement of the Cuboid is carried out with the aid of the automatic X-Rite "eXact" spectro-densitometer. The color measurements are done in accordance with ISO 13655 with angle of observation 2°, light source D50, measuring geometry 45°/0° or 0°/45° and black backing. The density values are measured with status E, polarisation filter ON and relative to paper. Aperture size of the instrument is 2 mm. Dot gain is calculated by the Murray-Davies formula. We use the Techkon "RMS 910" to measure color register.



*X-Rite "eXact" color measuring instrument (left) and Techkon "RMS 910" register measuring instrument (right)*

In order to evaluate the general printing quality, two randomly selected copies from two different competition months are taken from the submitted sample copies. The first 16 four-color pages of each newspaper copy are assessed. The first 32 four-color pages of each magazine copy are assessed. The results of this evaluation are published in the final report.

### 1.12 Inter-instrument agreement

In an international competition such as the ICQC, it is crucial to know how accurately the values measured by the WAN-IFRA spectrophotometer are and how instruments used by WAN-IFRA agree with those of the participants.

All participants will receive a sample Cuboid from WAN-IFRA and corresponding values measured from WAN-IFRA's spectrophotometer (Instrument, which will be used to evaluate the Cuboid during the contest period). Participants can compare the results of WAN-IFRA with their own measurement instruments. It's advisable to calibrate the instruments before beginning of the contest.

Participants who register the contest before 15 October 2017 will get the reference sample before the Pre-Check run (10 November 2017). Participants who register later will get their reference sample within 3 weeks from the day of registration.



## 2. Evaluation and scoring system for different criteria

### 2.1 News-shade

Newsprint or paper shade (or color of the paper) is measured in accordance with light source D50, measuring geometry 45°/0° or 0°/45° and black backing. The news-shade is measured on non-printed areas of the Cuboid in patch B5.

Points are allocated based on the following criteria:

*For competition categories 1 and 2:*

<i>Color values</i>	<i>Points per evaluation</i>
L* = 78 or more	10
L* = less than 78	0
a* = between -2 and 2	10
a* = less than -2 or more than 2	0
b* = between -2 and 5	10
b* = less than -2 or more than 5	0
Total:	30

*For competition category 3:*

<i>Color values</i>	<i>Points per evaluation</i>
L* = 83 or more	10
L* = less than 83	0
a* = between -2 and 0	10
a* = less than -2 or more than 0	0
b* = between -2 and 3	10
b* = less than -2 or more than 3	0
Total	30

*For competition categories 4 and 5 the following process applies:*

The reference is in each case the mean value of L\*, a\* and b\* of all six test runs measured on the printed Cuboid. The color of the paper that is used should be within the tolerances listed in the table throughout the competition period. Delta L\*, a\* and b\* therefore represent the maximum permissible deviation from the mean value.

<i>Deviation from the mean value of the test runs</i>	<i>Points per evaluation</i>
Delta L* less than or equal to 2	5
Delta L* more than 2	0
Delta a* less than or equal to 1	5
Delta a* more than 1	0
Delta b* less than or equal to 1	5
Delta b* more than 1	0
Total	15

## 2.2 Mid-tone spread

The patches D3, D4, C4 and C1 of the Cuboid are used to measure the CMYK mid-tone spread. Difference in dot percentage between the color with highest dot gain and the color with lowest dot gain is called mid-tone spread. Points are awarded based on the deviation from the 6% production tolerance in the 40% measuring patch specified by the standard. It is not considered whether the dot gain is within the tolerances of the target Tone Value Increase (TVI) curve for all the categories.

**For categories 1, 2 and 3:**

<i>Mid-tone spread</i>	<i>Points per evaluation</i>
Less than or equal to 3%	10
Corresponds to 6%	2
Greater than 6%	0

Points are awarded in a linear process between 3% and 6%. The minimum no. of points is 2.

**For competition categories 4 and 5:**

<i>Mid-tone spread</i>	<i>Points per evaluation</i>
Less than or equal to 3%	5
Corresponds to 6%	1
Greater than 6%	0

Points are awarded in a linear process between 3% and 6%. The minimum no. of point is 1.

## 2.3 Dot gain

### 2.3.1 Dot gain at nominal 40%

The patches D3, D4, C4 and C1 of the Cuboid are used for measuring the CMYK dot gain in the 40% area. Each color is evaluated individually.

For category 1, 2 and 3, deviation from the reference value of 2% or less brings 2.5 points per color ( $4 \times 2.5 = 10$ ). In the case of a deviation between 2% to 5%, points are awarded in a linear process per color up to the minimum number of 1 point. With a deviation, more than 5% no points are awarded.

*For competition category 1, 2 and 3:*

<i>Dot gain in the 40% patch per color (C, M, Y, K)</i>	<i>Points per evaluation</i>
Deviation less than or equal to 2%	2.5
Deviation corresponds to 5%	1
Deviation greater than 5%	0

Points are awarded in a linear process between 2% and 5%. The minimum no. of point is 1.

*For competition category 1 the reference value is 26.2% dot gain in the 40% patch.*

*For competition categories 2 and 3 the reference value is 22% dot gain in the 40% patch.*

For categories 4 and 5 a deviation from the reference value of 2% or less brings 1.25 points per color ( $4 \times 1.25 = 5$ ). In case of a deviation between 2% and 5%, points are awarded in a linear process per color up to the minimum number of 0.5 point. With a deviation more than 5% no points are awarded.

For competition category 4 and 5:

Dot gain in the 40% patch per color (C, M, Y, K)	Points per evaluation
Deviation less than or equal to 2%	1.25
Deviation corresponds to 5%	0.50
Deviation greater than 5%	0

Points are awarded in a linear process between 2% and 5%. The minimum number of points is 0.50.

For competition categories 4 and 5, the reference value is the average of the dot gain measurements in the 40% patch of all six test run measurements.

### 2.3.2 Dot gain at nominal 70%

Patches C2, C5, C3 and D2 of the Cuboid are used for measuring the CMYK dot gain in the 70% range. Each color is evaluated individually.

For category 1, 2 and 3, a deviation from the reference value of 2% or less brings 2.5 points per color ( $4 \times 2.5 = 10$ ). In the case of a deviation between 2% and 5%, points are awarded in a linear process per color up to the minimum number of 1 point. With a deviation more than 5% no points are awarded.

For competition category 1, 2 and 3:

Dot gain in the 70% patch per color (C, M, Y, K)	Points per evaluation
Deviation less than or equal to 2%	2.5
Deviation corresponds to 5%	1
Deviation greater than 5%	0

Points are awarded in a linear process between 2% and 5%. The minimum no. of points is 1.

For competition category 1 the reference value is 19.8% dot gain in the 70% patch.

For competition categories 2 and 3 the reference value is 17.6% dot gain in the 70% patch.

For category 4 and 5 a deviation from the reference value of 2% or less brings 1.25 points per color ( $4 \times 1.25 = 5$ ). In case of a deviation between 2% and 5%, points are awarded in a linear process per color up to the minimum number of 0.50 point. With a deviation more than 5% no points are awarded.

For competition categories 4 and 5:

Dot gain in the 70% patch per color (C, M, Y, K)	Points per evaluation
Deviation less than or equal to 2%	1.25
Deviation corresponds to 5%	0.50
Deviation greater than 5%	0

Points are awarded in a linear process between 2% and 5%. The minimum number of points is 0.5.

For competition categories 4 and 5 the reference value is as follows:

76% of the average value of the dot gain measurements in the 70% patch from all test runs.

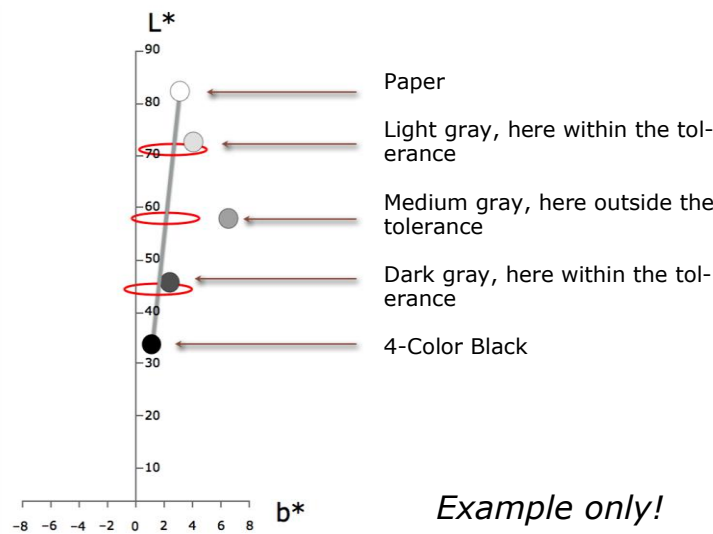
*Example: The average dot gain at nominal 40% is 25%. In such a case, the reference value for dot gain at nominal 70% is 19%, as  $25 \times 0.76 = 19$ .*

## 2.4 Gray balance in print

The patches A4, A5, C6 and D5 or D6 of the Cuboid are used for the measurement.

The reference gray ( $a^*$  and  $b^*$ ) is calculated as follows: The lightest and darkest measured values (color of the paper, patch B4, and CMYK [4c black], patch D5 or D6) are connected via a straight line. This produces a reference grey axis in the color space that is used as an individual scale for the evaluation.

Based on the individually measured lightness value  $L^*$  of light, medium and dark grey on the Cuboid concerned in each case, the color values  $a^*$  and  $b^*$  are mathematically calculated on the reference gray axis. These serve as targets for the measured  $a^*$  and  $b^*$  values of the gray patches A4, A5 and C6. We refer to the thus-calculated color difference as "Delta  $C^*$  absolute".



*The individual reference gray axis is the connection between the color of the paper and CMYK (4C black).*

*The gray axis is in most cases not parallel to the lightness axis  $L^*$ , but instead at an angle to it because the typical yellow hue of newsprint is reduced in the shadows.*

*The printed CMY gray tones are compared to the reference gray axis. The deviation is referred to as "Delta  $C^*$  absolute".*

For Category 1, patch D6 is used for measuring the  $L^*a^*b^*$  values of 4-color-black. Patch D6 corresponds to a TIC of 220%.

For category 2, 3, 4 and 5, patch D5 is used for measuring the  $L^*a^*b^*$  values of 4-Color black. Patch D5 corresponds to a TIC of 240%.

Points are awarded based on the below table.

For competition categories 1, 2 and 3:

<i>Deviation per gray patch (A4, A5, C6)</i>	<i>Points per Gray patch and evaluation</i>
Less than or equal to 1.5 " <i>Delta C* absolute</i> "	10
Corresponds to 3 " <i>Delta C* absolute</i> "	2
Greater than 3 " <i>Delta C* absolute</i> "	0

Points are awarded in a linear process for deviation between 1.5 and 3 Delta C\*. Minimum no. of points is 2.

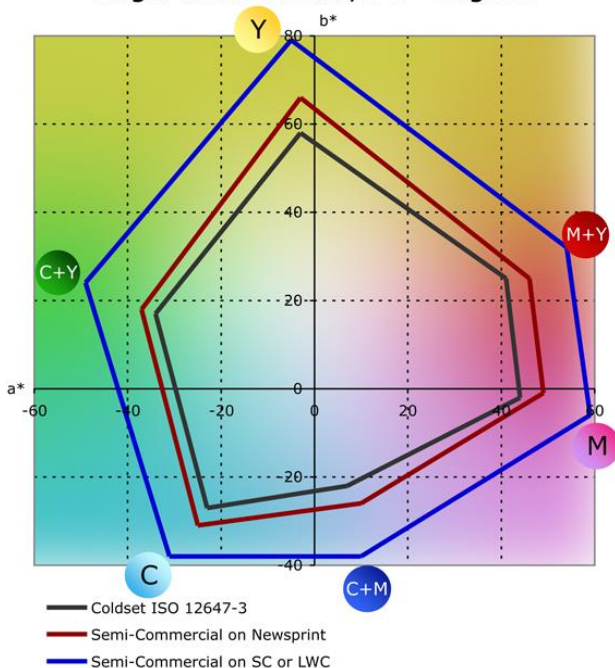
For competition categories 4 and 5:

<i>Deviation per gray patch (A4, A5, C6)</i>	<i>Points per Gray patch and evaluation</i>
Less than or equal to 1.5 " <i>Delta C* absolute</i> "	5
Corresponds to 3 " <i>Delta C* absolute</i> "	1
Greater than 3 " <i>Delta C* absolute</i> "	0

Points are awarded in a linear process for deviation between 1.5 and 3 Delta C\*. Minimum no. of points is 1.

## 2.5 Color space

**Target Colour Gamuts, a\*b\* Diagram**



The L\*a\*b\* values of the patches A6, A2, A1, B1, B6, A3, B5 and D5 or D6 of the Cuboid are used for the calculation. The size of the color space range, which results from the combination of the colors CMY and RGB as well as the paper white and 4C black, can be shown as a three-dimensional entity within the L\*a\*b\* color space.

The a\*/b\* diagram shows the different target color spaces. The black color space corresponds to the standard cold-set newspaper offset process in accordance with ISO 12647-3:2013. With the aid of heat-set drying or UV curing it is possible to print a larger color space range (red) on the same paper. If in addition a higher-quality paper grade (SC or LWC) is used, this will further enlarge the color space (blue).

For category 1, patch D6 (TIC 220%) is measured for the L\*a\*b\* values of 4-C Black.

For category 2 and 3 patch D5 (TIC 240%) is measured for the L\*a\*b\* values of 4-C Black.

For categories 4 and 5 this color space evaluation is not used.

The following color reference values apply for the calculation of the color space and color conformity (see section 2.6):

*Color reference values for competition category 1*

Colors	L*	a*	b*
Cyan	57	-23	-27
Magenta	54	44	-1
Yellow	78	-3	58
Black (K)	36	1	4
Green, Y + C	53	-34	17
Blue, C + M	41	7	-22
Red, M + Y	52	41	25
4c-Black, CMYK	34	1	2
White, news-shade	82	0	3

*Color reference values for competition category 2*

Colors	L*	a*	b*
Cyan	55	-25	-31
Magenta	51	49	-1
Yellow	78	-3	66
Black (K)	35	1	2
Green, Y + C	50	-37	18
Blue, C + M	35	10	-26
Red, M + Y	49	46	25
4c-Black, CMYK	30	1	2
White, news-shade	82	0	3

*Color reference values for competition category 3*

Colors	L*	a*	b*
Cyan	56	-31	-38
Magenta	50	59	-6
Yellow	83	-5	79
Black (K)	27	0	1
Green, Y + C	50	-49	24
Blue, C + M	33	10	-38
Red, M + Y	48	54	32
4c-Black, CMYK	26	0	1
White, news-shade	86	-1	2

For competition categories 1, 2 and 3, the following applies:

<i>Measured color space</i>	<i>Points per evaluation</i>
At least 90% of the reference color space	11
Corresponds to 75% of the reference color space	2
Less than 75% of the reference color space	0

If the color gamut is between 75% and 90% of the reference color gamut points will be deducted in the range from 11 to 2 points. If the color gamut is smaller than 75% no points will be applied.

In categories 4 and 5 the criteria and points of this section (2.5) are combined with those of section 2.6. You will find the detailed instructions in section 2.6.



## 2.6 Color conformity

See 2.5 (color space) for the target color values.

*Calculation method (categories 1, 2 and 3):*

If the measured values of the primary and secondary colours lie within a defined color distance from the reference value ( $\Delta E_{LAB 76}$ ), 7 points per color are awarded. Therefore, a total of 49 points per evaluation can be achieved.

<i>Color difference <math>\Delta E_{LAB 76}</math></i>		<i>Points per evaluation</i>
Cyan	Less than or equal to 5	7
	Greater than 5	0
Magenta	Less than or equal to 5	7
	Greater than 5	0
Yellow	Less than or equal to 5	7
	Greater than 5	0
Black (K)	Less than or equal to 5	7
	Greater than 5	0
Red (M + Y)	Less than or equal to 8	7
	Greater than 8	0
Green (M + Y)	Less than or equal to 8	7
	Greater than 8	0
Blue (M + C)	Less than or equal to 8	7
	Greater than 8	0
Total		49

If the measured color difference is greater than required, it is calculated in a second step whether the measured chroma ( $C^*_{ab}$ ) is greater or smaller than the chroma of the reference color.

If the measured chroma is smaller than required, no points are awarded. If the measured chroma is greater than that of the reference color, a final check is carried out to establish whether the measured color lies within an acceptable color angle difference ( $\Delta h_{ab}$ ) from the target as well as whether the lightness is sufficiently close to that of the target color value ( $\Delta L$ ).

<i>If color difference <math>\Delta E_{LAB 76}</math> is exceeded, but the reference chroma achieved (in case of Black [K] unachieved), then:</i>		<i>Point per evaluation</i>
Cyan	Delta L less than 5	7
	Delta h less than 2.5	
	One of the requirements not satisfied	0
Magenta	Delta L less than 5	7
	Delta h less than 2.5	
	One of the requirements not satisfied	0
Yellow	Delta L less than 5	7
	Delta h less than 2.5	
	One of the requirements not satisfied	0
Black (K)	Delta L less than 5	7
	Delta h less than 2.5	
	One of the requirements not satisfied	0
Red (M + Y)	Delta L less than 8	7
	Delta h less than 5	
	One of the requirements not satisfied	0
Green (M + Y)	Delta L less than 8	7
	Delta h less than 5	
	One of the requirements not satisfied	0
Blue (M + C)	Delta L less than 8	7
	Delta h less than 5	
	One of the requirements not satisfied	0
Total		49

#### Calculation method for categories 4 and 5

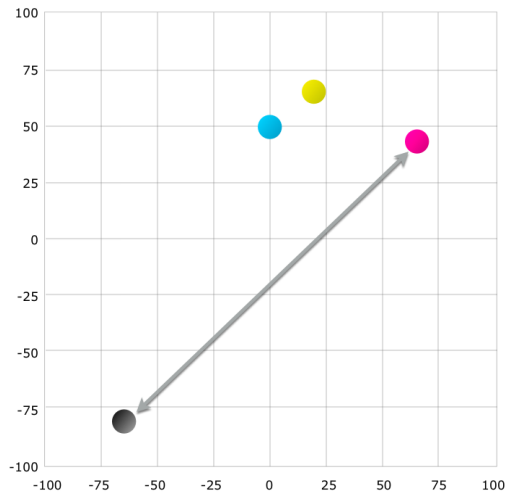
For Categories 4 and 5 the average of the  $L^* a^* b^*$  color values of all six test runs constitutes the reference per color (C, M, Y, K, R, G, B). In this case, the color difference ( $\Delta E_{LAB 76}$ ) therefore represents the distance to the average of all measurements.

Points are awarded in accordance with the following system:

<i>Color difference <math>\Delta E_{LAB 76}</math></i>		<i>Points per evaluation</i>
Cyan	Less than or equal to 2	4
	Greater than 2	0
Magenta	Less than or equal to 2	4
	Greater than 2	0
Yellow	Less than or equal to 2	4
	Greater than 2	0
Black (K)	Less than or equal to 2	4
	Greater than 2	0
Red (M + Y)	Less than or equal to 4	4
	Greater than 4	0
Green (M + Y)	Less than or equal to 4	4
	Greater than 4	0
Blue (M + C)	Less than or equal to 4	4
	Greater than 4	0
4c-Black, CMYK	Less than or equal to 4	2
	Greater than 4	0
Total		30

## 2.7 Color register

The Cuboid contains six small color points (patch B4) for automatic color register measurement.



*In order to measure the color register error, the largest distance between two colors of the color set is calculated.*

*In the accompanying example (left), the greatest distance is between magenta and black.*

For competition categories 1, 2 and 3:

<i>The largest color register deviation between two colors</i>	<i>Points per evaluation</i>
Less than or equal to 200 $\mu\text{m}$ (0.20 mm)	30
More than 200 $\mu\text{m}$ (0.20 mm)	0

For competition categories 4 and 5:

<i>Color register deviation</i>	<i>Points per evaluation</i>
Less than or equal to 200 $\mu\text{m}$ (0.20 mm)	15
More than 200 $\mu\text{m}$ (0.20 mm)	0

## 2.8 General Print Quality

In case of newspapers, the first 16 four-color pages of the main product from two randomly selected production runs are evaluated. If the publication title concerned contains fewer than 16 four-color pages per issue, the participant must submit 10 copies per competition month from an additional publication day for evaluation to ensure that sufficient color pages are available for the assessment per month. More details in section 1.2.

In case of magazines, will evaluate first 32 four-color pages (16 spreads). Will deduct 0.5 mark for each print defect on every single page.

Each participating title starts out with the maximum number of 576 points. Points are deducted where deficiencies are detected. Each deficiency criterion is applied only once per page. For example, this means that "printed plate edges" result in a loss of points only once on a page, even if it is visible in several places on the page.

A total of 64 pages (2 x 32) are evaluated for each participating newspaper title. A maximum of 18 points can be subtracted per two pages, leading to a maximum loss of all points (32 spread pages x 18 points = 576).

The jury responsible for evaluating the general printing quality will do so from an “**expert’s point of view**”. The evaluation criteria for all competition categories are as follows:

<b>Evaluation criteria</b>			<b>Points deducted per two page spread</b>
<b>Category</b>	<b>No</b>	<b>Detected deficiencies</b>	
Printing process	1	Over inking or under inking, density fluctuations	1
	2	Disturbing strike-through, print-through	1
Color register	3	Disturbing mis-register	1
Mechanical print quality	4	Disturbing set-off	1
	5	Impressions from draw rollers, path rollers	1
	6	Dirt stains, finger print marks	1
	7	Printing plate edges	1
	8	Printing plate scratches	1
	9	Poor lateral register, poor ribbon register	1
	10	Disturbing toning	1
	11	Paper wrinkles / Creasing	1
	12	Hickeys / Picking (Fluff accumulation)	1
	13	Pin holes in image area	1
	14	Slur / Doubling	1
Image and graphic quality	15	Deficient sharpness, low resolution, moiré	1
	16	Color cast	1
	17	Deficient contrast, brightness	1
	18	Deficient tonal reproduction (Flat, missing highlight / shadow)	1
<b>Total</b>			<b>18</b>

**Shipment address and instruction for shipping:**

Please send your publication copies to the following address, **exactly as written below (include Email id as well).**

WAN-IFRA South Asia Pvt Ltd  
RMTC Division, C/O PII RIND  
2<sup>nd</sup> main, CPT Campus, Taramani,  
Chennai 600113, Tamil Nadu, India  
**Landmark:** Asian college of journalism  
Mob : +91.8792178292 and +91.7358299188  
Email : [prabhu.n@wan-ifra.org](mailto:prabhu.n@wan-ifra.org)

Note: **Annexures 1 & 2** (given in **page 20 & 21**) are mandatory.

**Annexure 1:** (Participant outside India only) Must be filled (hand written) and **pasted outside the package** (should not insert inside the package). If Annexure 1 is not attached with package, customs will delay the clearance and may impose additional duty. This fee should be paid by the shipper if annexure 1 is not attached.

**Annexure 2:** must be filled & attached inside your package, which contains publication copies.

**N.B.**

Despite every effort to ensure correct calculations, errors or faults cannot be excluded. Please note the date of the instructions at the bottom of each page, as up to the start of the competition minor changes are possible. We remain at your disposal for all queries or individual advice.

Yours sincerely,

**Prabhu Natrajan**

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This concludes our instructions. We welcome your participation in the International Color Quality Club 2018–2020 competition and wish you much success! We are confident that the participation will support you by helping you to motivate your personnel, optimise your production processes and coordinate with suppliers.

**Annex 1: Declaration letter for Customs**

(Paste it outside the courier package while sending the package)

Date: \_\_\_\_\_

**Declaration**

**To Whomsoever It May Concern:**

In this package, we are sending \_\_\_\_ number of copies of our publication \_\_\_\_\_ of issue dated \_\_\_\_\_. Current worth of the material is not more than **2 \$ (Two dollar)** and shipping it to the following address for evaluation purpose only:

**WAN-IFRA South Asia Pvt Ltd,**  
RMTC Division, C/O PII-RIND,  
2<sup>nd</sup> main, CPT campus, Taramani,  
Chennai 600113, Tamilnadu, India  
Tel: +91.44.4211 0640  
Fax: +91.44.2435 9744

Kindly clear the customs at the earliest.

Yours truly,

\_\_\_\_\_  
Name of the person responsible

\_\_\_\_\_  
Designation

\_\_\_\_\_  
Company Seal



**Annex 2: Leaflet for Cuboid identification**

Please insert the completed leaflet inside the package .

Competition month	
Publication title	
Technical category (1–5)	
Company name	
Printing site	
Country	
Cuboid on page	